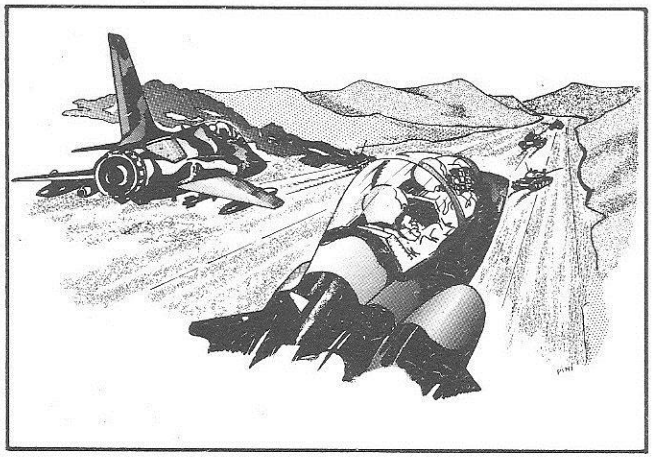
Elbit MILITARY PRODUCTS

L.C.W.D.S.



LOW COST WEAPON DELIVERY SYSTEM

INTRODUCTION

Elbit has taken advantage of its related experience to develop and produce the Low-Cost Weapon Delivery System (LCWDS), a cost-effective weapon delivery system.

Elbit's LCWDS represents a compromise between the very expensive, full-performance WDNS and the very low-cost, low-performance gunsight. The LCWDS significantly enhances aircraft operational capability, while the use of digital computation in combination with head-up display (HUD) significantly improves pilot performance.

The LCWDS is particularly compatible with:

- Light Attack Aircraft
- Advanced Trainers
- Interceptors

SYSTEM FEATURES

- 10 mr A/G weapon delivery accuracy *
- 3 mr A/A *
- 800 h minimum MTBF

* Depending on accuracy of A/C gyro reference unit.

MODES OF OPERATION

- Air-to-Ground (A/G)
- Air-to-Air /A/A)
- Navigation (NAV)*

A/G MODE

- CCIP (Continuously Computed Impact Point)
- TOSS*
- Manual

A/A MODE

- Hotline (Snap Shoot)
- Lead Computing Sight (LCOS)

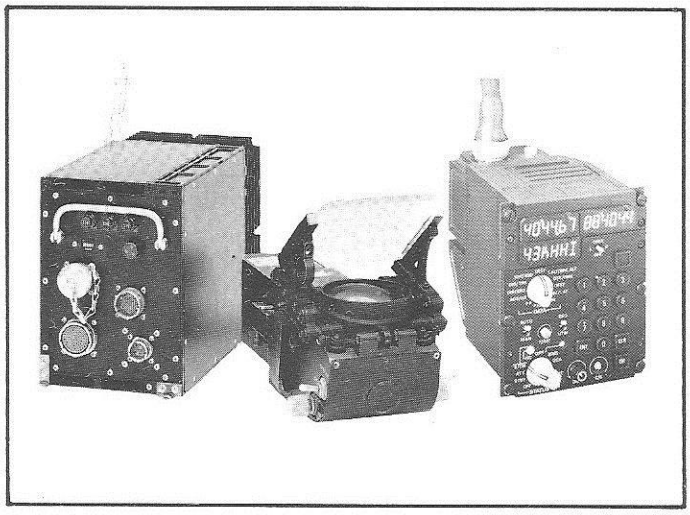
NAV MODE*

- Computation and display of steering commands for preselected waypoints

* This option requires installation of a Doppler system.

GENERAL DESCRIPTION

The LCWDS is based on the installation of 3 new components to the aircraft and interfacing them with existing aircraft sensors and indicators.



GENERAL DESCRIPTION (Cont'd)

Added Subsystems

- Central Mission Computer (CMC)
  - Digital Processor
  - Symbol Generator
  - Aircraft Interface Unit
- Head-Up Display (HUD)
  - CRT Head-Up Display
  - Operator Control Functions
- Control Terminal Unit (CTU)

The control and display unit represents the interface between the pilot and the LCWDS.

CHARACTERISTICS

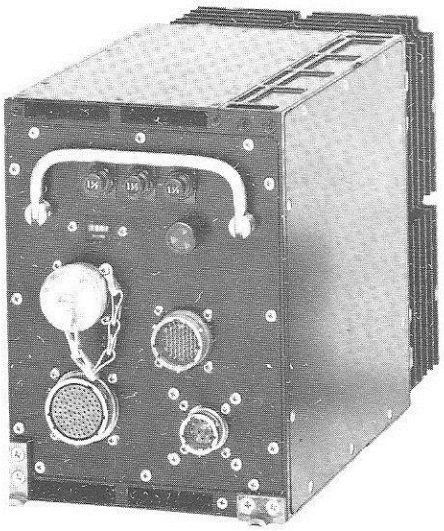
System Envelope

Velocity (true air speed) . . . . . 0-650 knots
Pitch rate. . . . . ±90°/s
Yaw rate . . . . . ±90°/s
Roll rate . . . . . ±360°/s
Altitude. . . . . 50,000 ft

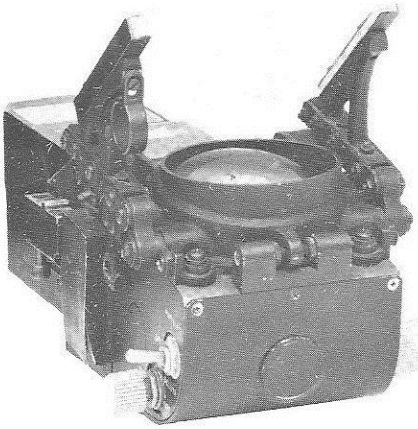
Processor. . . . . HMOS 16-bit μprocessor

Memory

Solid-state
EPROM. . . . MOS-CMOS low-power technology
Program memory. 16Kwords
(expandable up to 64K)



CMC



HUD

CTU

Existing Aircraft Systems Interfaced to the LCWDS

- Sensors
  - Flux valve, Angle-of-Attack, Air Data Computer, Gyro Reference Unit
- Controllers
  - Armament Programmer
  - Stick and Throttle Switches
- Displays
  - Attitude Direction Indicator (ADI)
  - Horizontal Situation Indicator (HSI)

Clock. 5MHz

Power Requirements

CMC . . . . . less than 100W
CTU . . . . . less than 40W
HUD . . . . . less than 250W

Basic Configuration

Dimensions:

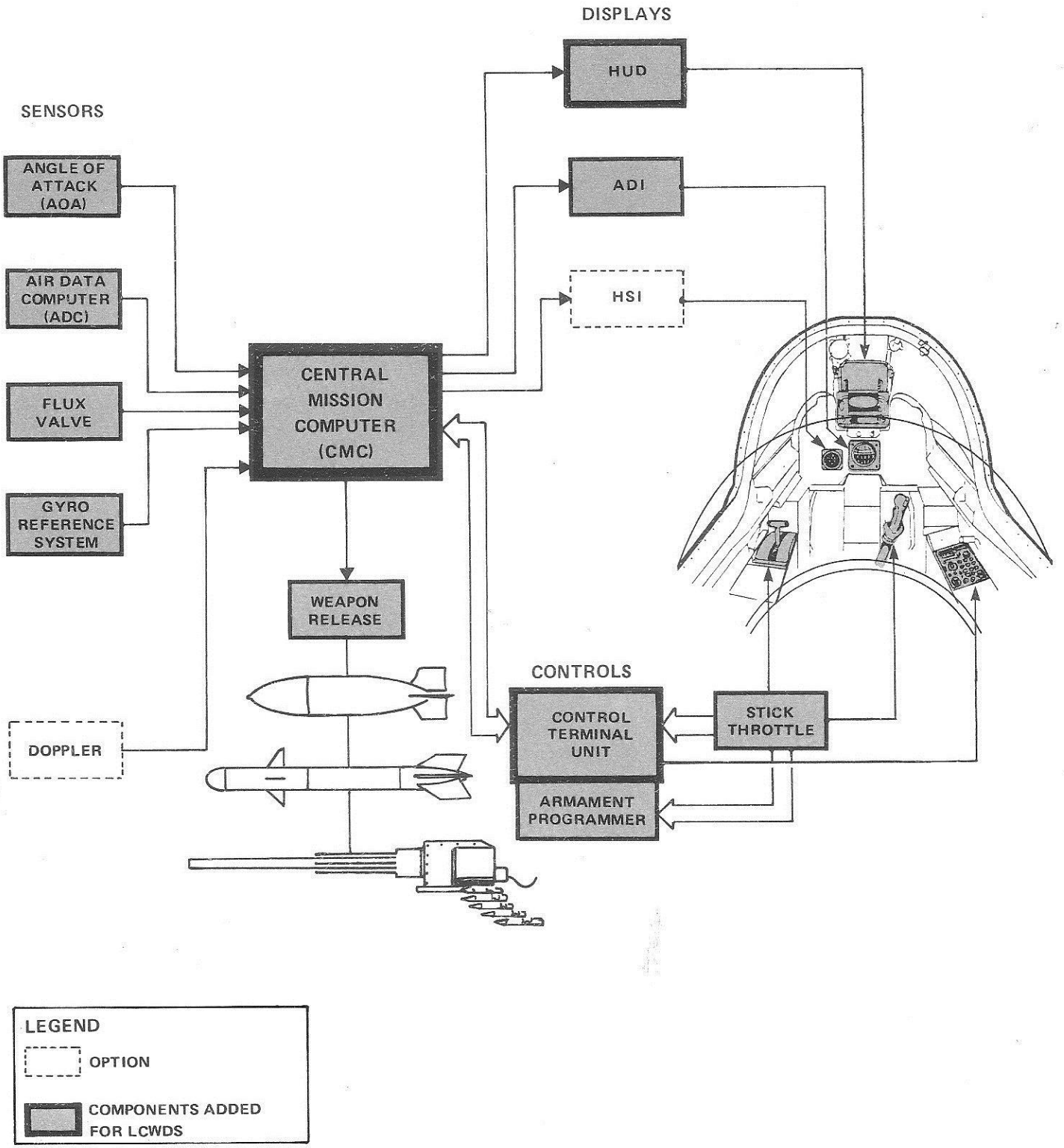
	CMC	CTU	HUD
Length (mm)	250	167	320
Height (mm)	195	175.3	120
Width (mm)	140	127	150

Weight:

CMC . . . . . 10 kg
CTU . . . . . 3 kg
HUD . . . . . 5 kg

MAIN LCWDS COMPONENTS

Block Diagram



OPERATIONAL ADVANTAGES

- Increased hit probability in A/G missions
- Enhanced A/A capability (LCOS, Hotline)
- Combat training with advanced WDS A/G and A/A modes
- Reduced pilot load and fatigue
- Reduced time required for attack

LOGISTIC ADVANTAGES

- Enhanced reliability and maintainability
- Relatively simple installation
- Built-in test
- Small volume, low weight

GROWTH POTENTIAL

Spare

- memory capacity
- computational capability
- actual hardware

Minimum System (Optional)

A LCWDS **without** HUD represents a very low-cost version. In such a simplified system, the original aircraft gunsight is used to present A/A and A/G aiming point, while the rest of the HUD information is not presented.

This option provides:

- A/G (CCIP)
- A/A (Snap Shoot, LCOS)

ELBIT QUALIFICATIONS

- 10 years experience in avionics design, development and production (hardware and software)
- Equipment on A4, F4 and Kfir aircraft
- Design based on operational experience

The greatest care and skill, together with combat experience, assure quality and reliability.

Elbit COMPUTERS LTD.
Advanced Technology Center
P.O.B. 5390, Haifa 31053, Israel
Tel. 04-517111, Telex 46774

PUB. NO. EP81-0398